

### Abstract of the Disclosure

A nitride layer of the gate mask for the semiconductor device is deposited at a temperature higher than 750 deg. C so as to release hydrogen from the nitride layer. Alternatively, a nitride layer of the gate mask for the semiconductor device is deposited in a gas atmosphere with use of an ammonia gas and a silane gas such that a flow rate of the ammonia gas is set at least twenty times or greater than that of the silane gas .

Accordingly, the problem with respect to the threshold voltages  $V_t$  of the semiconductor devices varying greatly from device to device when the polysilicon layer or the amorphous silicon layer is formed in the vicinity of the nitride layer and is doped with Group III impurities, will be solved.